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EXAMINER

LE, LANA N

ART UNIT PAPER NUMBER

2684

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/560,294

Applicant(s)

NIELSEN, GEORGENE M.

Examiner

Lana Le

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 1, 3-5, 7, 9-11, 13, 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Ueda (US 6,009,331).

Regarding claim 1, Ueda discloses a system for load balancing, based on class of service (col 7, lines 25-49), for wireless communication networks having a plurality of cells, each cell adapted to serve a plurality of mobile subscriber stations, comprising:

means for determining when assignment of a mobile subscriber station to a cell results in a first criteria being exceeded (S21, fig. 6);

means, responsive to said means for determining, for identifying at least one

of a plurality of mobile subscriber stations served by said cell for reassignment to another cell based upon the class of service of said plurality of mobile subscriber stations (S23, fig. 6; col 7, lines 25-49).

Regarding claims 3, Ueda further discloses the system for load balancing of claim 1 wherein said means for identifying comprises:

means for determining a class of service (priority level) for said plurality of mobile subscriber stations served by said cell (S23 of fig 6);

means for selecting at least one mobile subscriber station having the non-priority class of service of said plurality of mobile subscriber stations served by said cell (S25; fig. 6);

means for identifying another cell capable of serving said selected at least one mobile subscriber station (S26 of fig. 6).

Regarding claim 4, Ueda further discloses the system for load balancing of claim 3 wherein said means for selecting comprises:

means for arbitrating among ones of at least one mobile subscriber station having the lowest class of service of said plurality of mobile subscriber stations served by said cell, using additional criteria selected from call management factors, such as: signal strength in adjacent cells, and the like (S25; fig. 6).

Regarding claim 5, Ueda further discloses the system for load balancing of claim 3 wherein said means for identifying further comprises:

means for effecting a handoff of a communication connection that serves said

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selected at least one mobile subscriber station from said cell to said another cell (S28 & S29; fig. 6).

Regarding claim 7, Ueda discloses a method (fig. 6) of load balancing, based on class of service, for wireless communication networks having a plurality of cells, each cell adapted to serve a plurality of mobile subscriber stations, comprising the steps of:

determining when assignment of a mobile subscriber station to a cell results in a first criteria being exceeded when all channels are busy (S21);

identifying, in response to said step of determining, at least one of a plurality of mobile subscriber stations served by said cell for reassignment to another cell based upon the class of service of said plurality of mobile subscriber stations (S23-28; fig. 6; col 7, lines 25-49).

Regarding claim 9, Ueda further discloses the method of load balancing of claim 7 wherein said step of identifying comprises:

determining a class of service for said plurality of mobile subscriber stations served by said cell (S23; fig. 6);

selecting at least one mobile subscriber station having the lowest class of service of said plurality of mobile subscriber stations served by said cell (S25; fig. 6);

identifying another cell capable of serving said selected at least one mobile subscriber station (S26; fig. 6).

Regarding claim 10, Ueda further discloses the method of load balancing of claim 9 wherein said step of selecting comprises:

arbitrating among ones of at least one mobile subscriber station having the

lowest class of service of said plurality of mobile subscriber stations served by said cell, using additional criteria selected from call management factors, such as: duration of signal strength in adjacent cells, and the like (S25; fig. 6).

Regarding claim 11, Ueda further discloses the method of load balancing of claim 9 wherein said step of identifying further comprises:

effecting a handoff of a communication connection that serves said selected at least one mobile subscriber station from said cell to said another cell (S26-S29; fig. 6).

Regarding claim 13, Ueda discloses a system for load balancing, based on class of service, for wireless communication networks having a plurality of cells 31 and 32, each cell adapted to serve a plurality of mobile subscriber stations 41 and 42 (fig. 2a), comprising:

traffic load determining means for determining when assignment of a mobile subscriber station to a cell results in a first criteria being exceeded (S21, fig. 6);
subscriber class of service identification means, responsive to said traffic load determining means, for identifying at least one of a plurality of mobile subscriber stations served by said cell for reassignment to another cell based upon the class of service of said plurality of mobile subscriber stations (S23; fig. 6; col 7, lines 25-49).

Regarding claim 15, Ueda further discloses the system for load balancing of claim 13 wherein said subscriber class of service identification means comprises:

class of service means for determining a class of service for said plurality of mobile subscriber stations served by said cell (S23 of fig. 6);

mobile subscriber station selection means for selecting at least one mobile subscriber station having the lowest class of service of said plurality of mobile subscriber stations served by said cell (S25; fig. 6);

candidate cell means for identifying another cell capable of serving said selected at least one mobile subscriber station (S26 of fig. 6).

Regarding claim 16, Ueda further discloses the system for load balancing of claim 15 wherein said mobile subscriber station selection means comprises:

additional criteria determining means for arbitrating among ones of at least one mobile subscriber station having the lowest class of service of said plurality of mobile subscriber stations served by said cell, using additional criteria selected from call management factors, such as: duration of call connection, location of mobile subscriber within the cell, proximity to an adjacent cell, signal strength in adjacent cells, and the like (S25; fig. 6).

Regarding claim 17, Ueda further discloses the system for load balancing of claim 15 wherein said subscriber class of service identification means further comprises:

handoff activation means for effecting a handoff of a communication connection that serves said selected at least one mobile subscriber station from said cell to said another cell (S28 & S29; fig. 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda in view of Bodin (US 5,241,685).

Regarding claim 2, Ueda didn't further disclose the system for load balancing of claim 1 wherein said first criteria comprises traffic load, said means for determining comprises:

means for measuring a traffic load in said cell (col 2, lines 55-57); and

means for comparing said measured traffic load to a predetermined traffic load

threshold x (step 102 of fig. 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the occupancy threshold of Bodin with Ueda in order to determine that all channels are occupied by comparing with a predetermined overload occupancy number.

Regarding claim 8, Ueda further discloses the method of load balancing of claim 7 wherein said first criteria comprises traffic load, said step of determining comprises:

measuring a traffic load in said cell (col 2, lines 55-57); and

comparing said measured traffic load to a predetermined traffic load threshold x (step 102 of fig. 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the occupancy threshold of Bodin with Ueda in

order to determine that all channels are occupied by comparing with a predetermined overload occupancy number.

Regarding claim 14, Ueda didn't further disclose the system for load balancing of claim 13 wherein said first criteria comprises traffic load, said traffic load determining means comprises:

traffic load measurement means for measuring a traffic load in said cell (col 2, lines 55-57); and

traffic threshold means for comparing said measured traffic load to a predetermined traffic load threshold.

Bodin discloses further disclose the system for load balancing of claim 13 wherein said first criteria comprises traffic load, said traffic load determining means comprises:

traffic load measurement means for measuring a traffic load in said cell; and

traffic threshold means for comparing said measured traffic load to a

predetermined traffic load occupancy threshold x (fig. 4, step 102). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the occupancy threshold of Bodin with Ueda in order to determine that all channels are occupied by comparing with a predetermined overload occupancy number.

3. Claims 6, 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda (US 6,009,331).

Regarding claims 6 and 18, Ueda didn't further explicitly disclose the system for load balancing of claim 4 wherein said means for identifying further comprises:

means, responsive to said means for effecting, for reviewing the secondary criteria to determine whether additional handoffs of mobile subscriber stations to other cell sites is advisable. However, it is well known in the art for the cycle of S25 of Ueda to continue and repeat when additional handovers of other mobile units when all channels are still busy.

Regarding claim 12, Ueda didn't further explicitly disclose the method of load balancing of claim 10 wherein said step of identifying further comprises:

reviewing, in response to said step of effecting, the secondary criteria to determine whether additional handoffs of mobile subscriber stations to other cell sites is advisable. However, it is well known in the art for the cycle of S25 of Ueda to continue and repeat when additional handovers of other mobile units when all channels are still busy.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lana Le whose telephone number is (703)308-5836. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thanh Cong Le can be reached on (703)305-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9315 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-6750.



Lana Le

August 9, 2002



THANH CONG LE
PATENT EXAMINER

